Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser light generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical amplifier including an optical fiber amplifier which amplifies the laser light generated by the laser light generator; and

a wavelength converter which includes a plurality of nonlinear optical crystals which perform wavelength conversion of the laser light amplified by the optical amplifier, and a plurality of temperature controllers which perform temperature control of the plurality of the nonlinear optical crystals to tune phase matching angles at the time of wavelength conversion, wherein

the wavelength converter generates ultraviolet light.

2. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser light generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical amplifier including an optical fiber amplifier which amplifies the laser light generated by the laser light generator; and

a wavelength converter which performs wavelength conversion of the laser light amplified by the optical amplifier into ultraviolet light by using a plurality of the nonlinear optical crystals, wherein

a lithium tetraborate ($Li_2B_4O_7$) crystal is used for at least one of the plurality of nonlinear optical crystals.

3. (Previously Presented) A laser device as recited in claim 2, wherein

the wavelength converter generates an eighth-order harmonic wave as ultraviolet light from a fundamental wave of the laser light and a seventh-order harmonic wave thereof according to sum frequency generation, and

a lithium tetraborate ($Li_2B_4O_7$) crystal is used for a portion which generates the eighth-order harmonic wave.

4. (Previously Presented) A laser device as recited in claim 2, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal for which a GdYCOB crystal is used, in addition to the nonlinear optical crystal for which the lithium tetraborate crystal is used.

5. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser light generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical amplifier including an optical fiber amplifier which amplifies the laser light generated by the laser light generator; and

a wavelength converter which performs wavelength conversion of the laser light amplified by the optical amplifier into ultraviolet light by using a plurality of nonlinear optical crystals, wherein

a KAB ($K_2Al_2B_4O_7$) crystal is used for at least one of the plurality of nonlinear optical crystals.

6. (Previously Presented) A laser device as recited in claim 5, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal for which a GdYCOB ($Gd_XY_{1-x}Ca_4O(BO_3)_3$) crystal is used, in addition to the nonlinear optical crystal for which the KAB crystal is used.

7. (Previously Presented) A laser device as recited in claim 5, wherein

the wavelength converter generates an eighth-order harmonic wave from a fundamental wave of the laser light and a seventh-order harmonic wave thereof according to sum frequency generation, and

a KAB crystal is used for a portion which generates the eighth-order harmonic wave.

8. (Previously Presented) A laser device as recited in claim 5, wherein

the wavelength converter generates an eighth-order harmonic wave from a fourth-order harmonic wave of the laser beam according to second-order harmonic generation, and

a KAB crystal is used for a portion which generates the eighth-order harmonic wave.

9. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser light generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical amplifier including an optical fiber amplifier which amplifies the laser light generated by the laser light generator; and

a wavelength converter which performs wavelength conversion of the laser light amplified by the optical amplifier into ultraviolet light by using a plurality of nonlinear optical crystals, wherein

a GdYCOB ($Gd_XY_{1-x}Ca_4O(BO_3)_3$) crystal is used for at least one of the plurality of nonlinear optical crystals.

10. (Previously Presented) A laser device as recited in claim 9, wherein

the wavelength converter includes a portion which generates a fourth-order harmonic wave from a second-order harmonic wave of the laser light,

a GdYCOB crystal is used for the portion which generates the fourth-order harmonic wave, and the GdYCOB crystal generates the fourth-order harmonic wave according to non-critical phase matching.

11. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser light generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical amplifier including an optical fiber amplifier which amplifies the laser light generated by the laser light generator; and

a wavelength converter which performs wavelength conversion of the laser light amplified by the optical amplifier into ultraviolet light by using a plurality of nonlinear optical crystals, and which includes a plurality of relay optical systems which relay the laser light among the plurality of nonlinear optical crystals, wherein

the plurality of relay optical systems are each disposed to allow light of one wavelength to pass through.

12. (Previously Presented) A laser device as recited in claim 11, wherein

the wavelength converter generates an eighth-order harmonic wave from a fundamental wave and a seventh-order harmonic wave thereof, and

when generating the seventh-order harmonic wave, the wavelength converter uses the sum frequency generation of two light waves of fundamental, second-order harmonic, fifth-order harmonic, and sixth-order harmonic waves to generate the seventh-order harmonic wave.

13. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser generator which generates mono-wavelength laser light in a wavelength range of from an infrared region to a visible region;

an optical splitter which splits the laser light generated by the laser generator into a plurality of luminous fluxes;

a plurality of optical amplifiers which amplifies each of the plurality of luminous fluxes split by the optical splitter by using an optical fiber amplifier; and

a wavelength converter which performs wavelength conversion of laser light of a bundle of the plurality of luminous fluxes from the plurality of optical amplifiers into ultraviolet light by using a plurality of nonlinear optical crystals, wherein

the wavelength converter includes a nonlinear crystal which generates a harmonic wave according to sum frequency generation of a first beam composed of a fundamental wave or a harmonic wave of the laser light and a second beam composed of a harmonic wave of the laser light, and

an anisotropic optical system having magnifications which are different in two directions crossing each other to match the individual magnitudes of the plurality of luminous fluxes composing the first beam to the individual magnitudes of the plurality of luminous fluxes composing the second beam.

14. (Previously Presented) A laser device as recited in claim 13, wherein

the anisotropic optical system is either a cylindrical-lens array including the same number of lens elements as that of the plurality of luminous fluxes composing the laser beam or a prism array.

15. (Previously Presented) A laser device as recited in claim 11, wherein

the ultraviolet light has a wavelength of about 200 nm or shorter, and one of lithium tetraborate and KAB crystals is used for a last-stage nonlinear optical crystal of the plurality of nonlinear optical crystals which generates the ultraviolet light.

16. (Previously Presented) A laser device as recited in claim 15, wherein

a GdYCOB crystal is used for at least one nonlinear optical crystal which is different from the last-stage nonlinear optical crystal.

17. (Previously Presented) A laser device which generates ultraviolet light, comprising:

a laser generator which generates mono-wavelength laser light;

an optical amplifier including an optical fiber amplifier which amplifies the laser light; and

a wavelength converter which performs wavelength conversion of the amplified laser light into ultraviolet light having a wavelength of about 200 nm or shorter by using a plurality of nonlinear optical crystals, wherein

one of lithium tetraborate and KAB crystals is used for a last-stage nonlinear optical crystal of the plurality of nonlinear optical crystals which generates the ultraviolet light.

18. (Previously Presented) A laser device as recited in claim 17, wherein

a GdYCOB crystal is used for at least one nonlinear optical crystal which is different from the last-stage nonlinear optical crystal.

19. (Previously Presented) A laser device as recited in claim 1, further comprising

an optical splitter which splits the laser light generated by the laser generator into a plurality of laser beams, wherein

optical amplifiers are independently provided for the plurality of split laser beams, respectively, and

the wavelength converter collects fluxes of laser beams output from the plurality of optical amplifiers and performs wavelength conversion thereof.

20. (Previously Presented) A laser device as recited in claim 1, wherein

the laser generator generates a mono-wavelength laser light having a wavelength of near 1.5 μm, and

the wavelength converter converts a fundamental wave having the wavelength of near 1.5 μm output from the optical amplifier into ultraviolet light of one of an eighth-order harmonic wave and a tenth-order harmonic wave, and outputs the ultraviolet light.

21. (Previously Presented) A laser device as recited in claim 1, wherein

the laser generator generates a mono-wavelength laser light having a wavelength of near 1.1 μm, and

the wavelength converter converts a fundamental wave having the wavelength of near 1.1 μm output from the optical amplifier into ultraviolet light of a seventh-order harmonic wave, and outputs the ultraviolet light.

22. (Previously Presented) An exposure method, comprising irradiating ultraviolet light generated by the laser device as recited in claim 1,

onto a mask, and exposing a substrate with the ultraviolet light passed through the mask.

23. (Previously Presented) An exposure apparatus, comprising:

a laser device as recited in claim 1,

an illumination system which irradiates a mask with ultraviolet light from the laser device, and

a projection optical system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

24. (Previously Presented) A manufacturing method of an exposure apparatus which illuminates a mask with ultraviolet light, and which exposes a substrate with the ultraviolet light passed through the mask, comprising disposing

a laser device as recited in claim 1,

an illumination system which irradiates a mask with ultraviolet light from the laser device, and

a projection optical system which projects an image of a pattern of the mask onto a substrate, with a predetermined relationship.

25. (Previously Presented) A device manufacturing method including transferring a mask pattern onto a substrate through use of the exposure method as recited in claim 22.

26. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, ~~the test device~~ the light irradiation apparatus comprising:

the laser device as recited in claim 1; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

27. (Previously Presented) A laser device as recited in claim 1, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

28. (Previously Presented) A laser device as recited in claim 27, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

29. (Previously Presented) A laser device as recited in claim 2, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

30. (Previously Presented) A laser device as recited in claim 2, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

31. (Previously Presented) A laser device as recited in claim 30, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

32. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 2, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

33. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 2,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

34. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 2; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

35. (Previously Presented) A laser device as recited in claim 5, wherein

the plurality of nonlinear optical crystals include a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

36. (Previously Presented) A laser device as recited in claim 5, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

37. (Previously Presented) A laser device as recited in claim 36, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

38. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 5, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

39. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 5,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

40. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 5; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

41. (Previously Presented) A laser device as recited in claim 9, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

42. (Previously Presented) A laser device as recited in claim 9, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

43. (Previously Presented) A laser device as recited in claim 42, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

44. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 9, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

45. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 9,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

46. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 9; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

47. (Previously Presented) A laser device as recited in claim 11, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

48. (Previously Presented) A laser device as recited in claim 11, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

49. (Previously Presented) A laser device as recited in claim 48, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

50. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 11, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

51. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 11,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

52. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 11; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

53. (Previously Presented) A laser device as recited in claim 13, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

54. (Previously Presented) A laser device as recited in claim 13, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

55. (Previously Presented) A laser device as recited in claim 54, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

56. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 13, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

57. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 13,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

58. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 13; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.

59. (Previously Presented) A laser device as recited in claim 17, wherein

the plurality of nonlinear optical crystals includes a nonlinear optical crystal used in NCPM (Non-Critical Phase Matching).

60. (Previously Presented) A laser device as recited in claim 17, wherein

the laser light generator includes a mono-wavelength oscillatory laser and a light modulator and generates the laser light through pulse oscillation, and

the laser device further comprises an adjustment device which adjusts an oscillation property of the ultraviolet light generated from the wavelength converter by at least one of the mono-wavelength oscillatory laser and the light modulator.

61. (Previously Presented) A laser device as recited in claim 60, wherein

the oscillation property includes at least one of a wavelength, an intensity and an oscillation interval of the ultraviolet light, and

the adjustment device adjusts the oscillation property by detecting light having a wavelength different from the wavelength of the ultraviolet light.

62. (Previously Presented) An exposure method which uses the ultraviolet light from the laser device as recited in claim 17, comprising:

irradiating a mask with the ultraviolet light; and

exposing a substrate with the ultraviolet light passed through the mask.

63. (Previously Presented) An exposure apparatus, comprising:

the laser device as recited in claim 17,

an illumination system which irradiates a mask with the ultraviolet light from the laser device, and

a projection system which projects an image of a pattern of the mask onto a substrate, wherein

the substrate is exposed with the ultraviolet light passed through the mask.

64. (Currently Amended) A ~~test device~~ light irradiation apparatus used in manufacturing a device, the ~~test device~~ light irradiation apparatus comprising:

the laser device as recited in claim 17; ~~as a light source~~ and

an optical system optically connected to the laser device, wherein

ultraviolet light generated from the laser device is directed onto an object through the optical system.